

Appl. No. 09/940,756

Amdt. Dated 19 January 2005

AMENDMENTS TO THE CLAIMS

Please substitute the following claims for the respective claims previously existing in this application.

1. (Previously presented) A method of fabricating field emission sources comprising the steps of:
  - providing a conductive region having a surface;
  - depositing elongated emitters onto the surface of the conductive region; and
  - electrically orientating the emitters so that a first end of the emitter makes an electrical contact with the conductive region while a second end of the emitter is directed away from the surface of the conductive region, the electrically orientating the emitters step includes:
    - releasing adherence between the second end of the emitter and the conductive region; and
    - adding wave energy to the conductive region.

2. (Original) A method of fabricating field emission sources as claimed in claim 1 wherein the step of providing a conductive region having a surface includes depositing a conductive material onto a supporting substrate.

3. (Original) A method of fabricating field emission sources as claimed in claim 1 wherein the step of depositing elongated emitters onto the surface of the conductive region includes positioning a plurality of high aspect ratio members.

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4. (Original) A method of fabricating field emission sources as claimed in claim 3 wherein the step of positioning a plurality of high aspect ratio members onto the surface of the conductive region includes positioning members with an aspect ratio in a range of approximately 500 Å to 100,000 Å length and 10 Å to 1000 Å width.

5. (Original) A method of fabricating field emission sources as claimed in claim 4 wherein the step of positioning a plurality of high aspect ratio members onto the surface of the conductive region include positioning one of nanotubes, carbon fibers, nanocrystalline graphite, crushed graphite, and metallic threads.

6. (Original) A method of fabricating field emission sources as claimed in claim 3 wherein the step of positioning the plurality of high aspect ratio members includes adhering the high aspect ratio members to the conductive region using a conductive binder.

7. (Original) A method of fabricating field emission sources as claimed in claim 3 wherein the step of positioning the plurality of high aspect ratio members includes one of dry spraying, wet spraying, growing by means of CVD and using a seed material and electrophoretic deposition.

8-9. (Cancelled)

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10. (Currently amended) A method of fabricating field emission sources as claimed in claim 1 wherein the step of releasing adherence ~~breaking the bond~~ between the second end of the emitter and the conductive region includes applying a laser beam to the nanotube covered conductive region.

11. (Currently amended) A method of fabricating field emission sources as claimed in claim 1 ~~8~~ wherein the step of releasing adherence ~~breaking the bond~~ between the second end of the emitter and the conductive region includes using one of an electric field, a magnetic field, and electromagnetic energy.

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12. (Previously presented) A method of fabricating field emission sources comprising the steps of:

- providing a supporting substrate;
- depositing a first conductive region on the supporting substrate;
- positioning a plurality of emitters onto the first conductive region;
- placing a second conductive region over and spaced from the plurality of emitters; and

electrically orientating the plurality of emitters, by applying a laser beam to the emitters, subsequent to placing the second conductive region that the first end of the emitter makes an electrical contact with the first conductive region and the second end of the emitter is generally directed towards the second conductive region.

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13. (Previously presented) A method of fabricating field emission sources comprising the steps of:

- providing a supporting substrate;
- depositing a first conductive region on the supporting substrate;
- positioning a plurality of emitters onto the first conductive region;
- placing a second conductive region over and spaced from the plurality of emitters;
- placing an optically transparent insulator which is coated with indium tin oxide, and
- electrically orientating the plurality of emitters subsequent to placing the second conductive region that the first end of the emitter makes an electrical contact with the first conductive region and the second end of the emitter is generally directed towards the second conductive region.

14. (Original) A method of fabricating field emission sources as claimed in claim 12 wherein the step of positioning a plurality of emitters onto the first conductive region includes positioning high aspect ratio members.

15. (Original) A method of fabricating field emission sources as claimed in claim 14 wherein the step of positioning high aspect ratio members includes positioning one of nanotubes, carbon fibers, nanocoralline, crushed graphite, and metallic threads.

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16. (Cancelled)

17. (Original) A method of fabricating field emission sources as claimed in claim 12 wherein the step of orientating the plurality of emitters includes applying an electric field between the first and second conductive regions.

18. (Previously presented) A method of fabricating field emission sources comprising the steps of:

providing a conductive region having a surface;

depositing elongated emitters onto the surface of the conductive region;

partially dislodging the emitters by applying a laser beam to the emitters and without making mechanical contact with the emitters so that a first end of each of the plurality of emitters makes an electrical contact with the conductive region; and

activating the plurality of emitters to direct a second end of each of the emitters away from the surface of the conductive region.

19-23. (Cancelled)